(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



I IBBIR BINDIBI II BIRNE NEN BERN BERN BERN IN IN IN BERN BIRN BIRN BIRN BIRN BIR AN BERNA HER HER HER HER BER

(43) International Publication Date 19 May 2005 (19.05.2005)

PCT

(10) International Publication Number WO 2005/044416 A2

(51) International Patent Classification⁷:

B01D

(21) International Application Number:

PCT/US2004/035573

(22) International Filing Date: 27 October 2004 (27.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/514,949 28 October 2003 (28.10.2003) US 10/962,641 12 October 2004 (12.10.2004) US

(71) Applicant (for all designated States except US): OX-FORD INSTRUMENTS AMERICA, INC. [US/US]; 130A Baker Ave. Extension, Concord, MA 01742 (US).

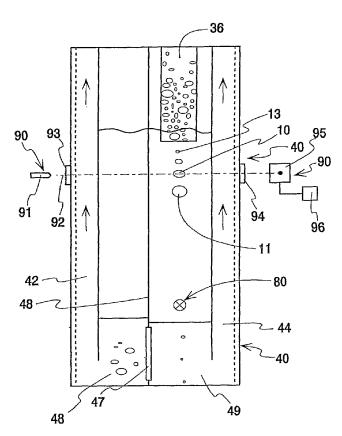
(71) Applicant and

(72) Inventor: KALECHOFSKY, Neal [US/US]; c/o Oxford Instruments America, Inc., 130A Baker Ave. Extension, Concord. MA 01742 (US).

- (74) Agent: PARKHURST, Todd; Holland & Knight LLP, 131 S. Dearborn Street, 30th Fl., Chicago, IL 60603 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: DEVICES, MATERIALS AND METHODS FOR SORTING, SEPARATING AND SIZING VERY SMALL PARTICLES



(57) Abstract: Advice for sorting separating and sizing very small particles is disclosed and claimed. The device comprises a cryogenic chamber within which particle movement, travel and separation can occur; a particle loading chamber for loading particles into the cryogenic chamber; and a particle collector. Also disclosed and claimed is helium, and more specifically helium in its superfluid state, for separating the particles.



WO 2005/044416 A2 |||||||||||||||

WO 2005/044416 A2



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

 without international search report and to be republished upon receipt of that report